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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 220400747

EXAMINER	
SODERQUIST, ARLEN	

ART UNIT	PAPER NUMBER
1743	

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/381,828	Applicant(s) SKOLD, ROLF	
	Examiner Arlen Soderquist	Art Unit 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-8 and 10-18* is/are rejected.

7)☒ Claim(s) *3 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 1-2, 4-8, 10-12, 14-15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tondre in view of Rouse and Dombay, Hagan, Nitta, Streett or Yan. In the paper Tondre teaches an automated device and method for the determination of isotropic microemulsion phases of ternary systems including a nonionic surfactant. The advantages and limits of an automatic procedure to permit the fast determination of the composition limits of isotropic microemulsion phases of water-oil-surfactant systems were determined. This system is based on detecting the temperature defining the lower and upper miscibility curves by the change of turbidity to study the solubilization of oil or water in binary mixtures of nonionic surfactants and water or oil and then reconstructing the usual ternary phase diagram at any chosen temperature. The method was especially well suited for the investigation of systems including nonionic surfactants which are very sensitive to temperature changes. Four systems were tested including hydrogenated as well as fluorinated surfactants and oils. Data obtained for systems having neat turbidity changes were easy to interpret. For systems containing a liquid crystalline phase the turbidity-temperature curve was more difficult to interpret. The last paragraph of page 581 teaches that the method is particularly useful when dealing with expensive products that one cannot afford to prepare a sealed ampoule for each point of interest in the phase diagram. The apparatus is shown in figure 2 and is substantially similar to the claimed structure. In the figure is shown a measuring cell holding a liquid sample, a magnet to stir or homogenize the sample, a

thermostated cell holder to change the temperature of the sample under control of a temperature programmer, a diluter (dosage organ) with programmer to add another liquid containing a different component concentration that changes the component concentration in a predetermined manner, a light source and detector (at least one measuring organ) to measure the turbidity (dependent property) of the sample as the component concentration and liquid temperature are changed and a temperature probe (measuring organ) to determine the temperature. Figures 3, 4, 5 and 6 show the temperature/turbidity data along with the concentration increments added. These figures clearly show that the liquid temperature and component concentration were controlled in a predetermined manner and that the data were displayed with the dependent physical property (turbidity curve) as a function of the independent variables (component concentration and temperature). It is noted that the concentration increments in these figures are all within the claimed range. The last paragraph of page 582 teaches that inclusion of temperature as a variable allows more information to be obtained than with a simple titration procedure that is at a fixed temperature. Tondre differs from the instant claims in that there is not a central computer to control the parts, store the data and display the data in a three dimensional format or diagram.

In the paper Rouse teaches automation of phase diagram recording. An automated titration system was developed for generating data to construct phase diagrams, which are extremely useful in the development of personal and household products. The authors describe the system and how it can be used to perform the technique of dual titration. A clear microemulsion sample is titrated with oil until the dispersion turns cloudy (defined to be a transmittance < 90%). This mixture is then dosed with a certain quantity of cosurfactant, more than enough to clear the mixture. The sample is again titrated with oil. This process continues until the sample no longer clears upon adding cosurfactant. The resulting measurements of oil uptake can be used to characterize the boundaries of the L1 or oil-in-H_2O microemulsion region of the phase space. Experiments for up to sixteen samples can be performed, each having individual setup and operating instructions. Features include completely automated operation, computer-controlled 2-speed mixing, viscosity detection at the end-point condition, and the storage of results in a computerized format. Page 14 teaches the calculation of the component concentration by the computer. Figures 1 and 6-7 show multidimensional representations of the

data with figure 7 being a contour plot. From the experimental section it is clear that the device and method use a single vessel to which additions of a solution that changes the concentration of at least one of the components is added in increments. It is noted that the ethylene glycol monohexyl ether (C_6E_1) used in the experiments is a nonionic surfactant.

Dombay presents an investigation of emulgation and emulsion stability of thiocarbamate herbicides. Emulsification and emulsion stability (persistence in time) of thiocarbamate herbicides (ethiolate, EPTC, cycloate and butylate) were investigated through photometric measurement of turbidity. Influence of various parameters were evaluated. The last paragraph of page 107 teaches that these parameters included temperature and component concentration (concentration of the emulsifier). Investigations included combined herbicidal formulations. Results were analyzed and represented by computer in three-dimensional diagrams. Figures 2-3 show three dimensional diagrams that were produced and included concentration (C) as one of the independent variables (page 108 last paragraph).

In the paper Hagan discusses a modular software-controlled electrochemical system. A modular microcomputer-controlled 3-electrode potentiostat configured with graphics is presented. The system was designed for metallic surface characterization and is capable of performing in different modes of operation including single sweep voltammetry, cyclic voltammetry, and chronoamperometry. An integrated and flexible software system for control, data taking, data storage, and transfer is described. Data analysis software for the IBM-PC computer including 2- and 3-dimensional plotting as well as menu-driven theoretical modeling, simulation, and curve fitting was developed. Figure 12 shows a three dimensional diagram that was produced by the system. The last paragraph teaches that for the display of a number of data sets on the same page or screen simultaneously, a three-dimensional plot is often helpful since the curves often contain similar shapes over certain areas of the curve. The three-dimensional curve allows the intuitive appreciation of the dependent processes. In the first paragraph of the introduction Hagan teaches that the electrochemical processes are generally complex and sometimes difficult to determine accurately. An important step in the increase in accuracy and reproducibility of the measurements was accomplished by use of computer-controlled analysis. One such device is referenced and taught as capable of controlling most of the analytical techniques. The paragraph then teaches that opportunities presented by the rapid increase in

computing power at the desktop level can be realized in new combinations of hardware and software. The availability of this computing power is bringing the capabilities of a main frame computer to the level of the desktop or laboratory computer. This new computing power is taught as having its most useful application in the areas of graphics displays, data processing and theoretical simulation of the phenomena under study. In the paragraph bridging pages 468-469 Hagan teaches that in order to provide the experimenter with the maximum information from the data and the greatest flexibility, an instrument must have the ability to store and recall the data for display or access in either numerical or graphic form. The paragraph then describes benefits of data handling and display.

In the paper Nitta presents phase equilibrium calculations and their three-dimensional computer graphics representation. An important role of global stability analysis is emphasized for phase equilibrium calculations to determine the thermodynamically most stable solution. An algorithm used in this work is to find first an outside solution in the Gibbs energy surface and then to search any inside solutions by means of the bisection search principle. The global stability analysis should also be applied to mixture critical points calculated from the conventional critical condition. Typical phase diagrams are calculated for binary mixtures including three phases (gas, liquid and solid) by using the Soave-Redlich-Kwong equation of state. Three-dimensional pressure-temperature-composition (pTx) phase diagrams were displayed on a personal computer with functions of rotation, zoom, enlargement and projections on the pT, px and Tx axes. The last paragraph of page 105 teaches that three-dimensional phase diagrams are superior to conventional pictures for understanding the phase behavior of complex systems. The work of a prior author, Charos et al. (of record in the instant application), although limited, was sufficient to demonstrate the potential of the computer graphic techniques for research and education of phase equilibria. Figures 3-7 show several phase diagrams with figure 7 also showing how the diagram can be viewed in slices or projections with the ability to see features in the projections (also see first full paragraph of page 112).

In the paper Streett presents phase behavior in fluid and solid mixtures at high pressures. Following the description of a classification scheme for fluid phase diagrams of two-component systems, based on boundary lines in pressure-temperature space, the three-dimensional features of several important classes of pressure-temperature-composition phase diagrams for two-

component mixtures at high pressures (up to 100 kbar) are described. The discussion includes two- and three-phase equilibria between gas, liquid and solid phases, with emphasis on the qualitative effects of pressure on these systems and the picture of continuity between different types of critical and 3-phase phenomena that has emerged from studies at high pressures. The last paragraph of page 143 teaches that a two-component system can be completely described by a three-dimensional diagram. The figures and associated discussion show several three dimensional diagrams and how they can be used to explore the systems studied.

In the paper Yan teaches automated establishment and plotting of multivariate functions. An earlier package for univariate functions is extended to multivariate functions in the QQN series software, which contains millions of models. The models are characterized by numbered basic and compound functions selected by the user. Plots for a selected model are displayed in rotatable three-dimensional coordinates. The package can be run on an IBM-PC or compatible computer. An application to plotting the thermal capacity of alkanes is given. The last full paragraph of page 495 teaches that graphic display is not only helpful to users, but also provides information that is otherwise inaccessible. For multivariate functions, sophisticated methods are needed to solve the problems and a graphical display of curved surfaces is more useful.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the computer of Rouse, Dombay or Hagan and use it to store the data of Tondre and produce three dimensional diagrams of the data as shown by Rouse, Dombay, Hagan, Nitta, Streett or Yan because of the ability to map out an emulsion property, overcome the tedious nature of the process and its extreme usefulness in the development of products as taught by Rouse or to gain the advantages of computing power now available at the desktop or laboratory level with their resulting benefits in display and interpretation of the data as shown by Dombay, Hagan, Nitta, Streett or Yan. Additionally the Courts have held that providing a mechanical or automatic means to replace manual activity which accomplishes the same result is within the skill of a routineer in the art (see *In re Venner*, 120 USPQ 192 (CCPA 1958)). Relative to the gradual vs. one-step methods of adding liquids to change the concentration the Courts have held that selection of any order of mixing ingredients is prima facie obvious (see In re Gibson, 5 USPQ 230 (CCPA 1930)).

3. Claims 12-13 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tondre in view of Rouse and Dombay, Hagan, Nitta, Streett or Yan as applied to claims 1-2, 4-8, 1-2, 4-8, 10-12, 14-15 and 18 above, and further in view of Khomutov, Ohno or Subbaramaiah (Subba Ramaiah). Tondre does not teach the scope of measurement methods.

In the paper Khomutov presents temperature-composition phase diagram and gel properties of the gelatin-starch-water system. The gelatin-starch-water system has been studied at different temperatures, at a total biopolymer concentration of 5.0 wt%. The weight ratios (W) of gelatin/starch used were 9:1, 8:2... 2:8, 1:9, with pH values between 5.82 (at W = 9.1) and 6.50 (at W = 1:9). The systems were characterized rheology and by turbidity measurements to construct a phase diagram in the temperature (T) and composition (W) variables. The T-W quadrant consists of three regions: a single-phase solutions region (A) and regions of complete and incomplete phase separation (B and C, respectively). The system in region C is a gel. Region B, lying between A and C, corresponds to two co-existing liquid phases. The transition from A to C (obtained by cooling the system at constant W) involves crossing region B. The properties of the resulting gels depend on the rate of this intersection. Gels formed on rapid cooling have an even distribution of turbidity, whereas slow cooling gives two gel layers of different turbidity. The gelation temperature and gel strength of the mixed systems are dominated by the gelatin component, with no indication of network formation by starch. The change in temperature is taught as continuous.

In the paper Ohno discusses isotope effects on hydrophobic interaction in hydrophobic polyelectrolytes. Optical, pH, viscometric, and 1H NMR titrations in 0.01-0.27 M aqueous NaCl at 5-45° indicated a more enhanced hydrophobic stabilization of the compact coil formed in hydrolyzed alternating maleic anhydride-perdeuteriostyrene copolymer (I) than in the undeuterated copolymer (II). The curves for the pH-induced conformational transitions from compact to extended coil forms were calculated from the pH and optical data in terms of the coil fraction in the molecule vs. degree of ionization of the carboxyl groups. Also, thermodynamic parameters of the conformational transition were determined from the pH-titration curves and their temperature dependence, considering dissociation of the secondary carboxyl groups. The transition curve, transition free energy, and difference of specific heats between the compact and

coil forms in 0.03 M aqueous NaCl for hydrolyzed I were compared with those previously reported for II.

In the paper Subbaramaiah discusses the solid-liquid transition of colloidal stearic acid. Sols of solid stearic acid in water show a marked "Schlierung" effect which disappears at the melting point of the acid, owing to transition from rod-shaped to spherical particles. The transition is reversible, and is accompanied by an inflection in the conductivity-temperature curve and sharp changes in intensity and depolarization of the light scattered from the particles of the sol.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add additional detection means as taught by Khomutov, Ohno or Subbaramaiah to the device and method of Tondre because as shown by Khomutov, Ohno or Subbaramaiah the additional detection methods give complimentary or additional information on the mixtures tested.

4. Claims 3 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims. The art of record does not teach or fairly suggest the method as claimed in which a volume of tested sample is replaced by an equal volume of liquid having the analyte at a concentration different than the tested sample to form a new sample for testing or an apparatus as claimed which has means to control the apparatus to perform the method of claim 3.

5. The declaration under 37 CFR 1.132 filed August 25, 2006 is insufficient to overcome the rejection of the claims based upon Tondre as set forth in the last Office action because of the following reasons: 1) before actual marketing begins, it is difficult to say that any commercial success has been shown, 2) there is no information about what type of interactions with the research community prompted the placement of the three instruments and 3) there is no probative evidence beyond applicant's statement that the reasons for the lease/purchase are as stated. Relative to item 1 without marketing having started how can one even show commercial success since the instrument is not "commercially" available. (It does not appear that applicant is able to present any sort of market analysis or show that they have captured a significant portion of the potential market as typically done to show commercial success.) The fact that the instrument is not commercially available, leads directly to item 2 above. If the instrument is not commercially

available, how did the companies and research institution become aware that the instrument existed? Were the companies and research institution partners with applicant in testing of the instrument and the instruments purchased and/or leased were those used under the research agreement? Or did the companies and research institution become aware of applicant's instrument through some other manner. There is not sufficient information given about how the instruments were placed with the respective companies and institution to determine if the placement of the instruments are actually commercial success or just research agreements with industry that are designed to help with the development of the instrument. The interactions between the applicant and the research community are very relevant to commercial success. If the instruments were placed as a part of an agreement between applicant and the respective companies/institution for research to develop the instrument, there is no evidence of commercial success in entering into a research agreement. Additionally there may be other factors such as cost benefits (reduced or no cost) that motivated the companies/institution to enter into the purchase or lease agreement that resulted from participating in testing of applicant's instrument. Since official marketing has not occurred, it is not possible to determine if the price paid is what applicant will charge when marketing begins or was reduced. Relative to item 3 above, the declaration fails to provide evidence that the reasons given in paragraph 5 of the declaration were the actual reasons the companies/institution acquired/leased the devices. Since applicant has not provided actual correspondence in support of the statements, the statements of paragraph 5 appear to constitute hearsay evidence. Thus there is not enough evidence to show commercial success or a nexus between the claimed features and the decision to acquire/lease applicant's instrument.

6. Applicant's arguments filed August 4, 2006 have been fully considered but they are not persuasive. Aside from noting that the previous office action had only two grounds of rejection that covered the claims and was dealing with seven newly submitted claims examiner will deal only with the arguments that are directed to the two grounds of rejection in the instant action. In response to applicant's argument that the examiner has combined an excessive number of references, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention, since criterion is not number of references, but whether references are in fields which are same as or analogous to field of invention, and

whether their teachings would, taken as whole, have made invention obvious to person skilled in that field. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

Relative to the declaration and its attempt to show commercial success, examiner notes that the device being claimed is not a commercial product or commercially available (marketing has not started per applicant's admission). This removes the possibility of any sales being evaluated in a typical manner. This also places a greater burden on applicant to provide information on how the purchasers became aware of the instrument and agreements between the two parties that might have affected the decision to purchase the instrument. Applicant appears to place some significance on who has purchased the instruments. More important than who is why they purchased the instrument: the claimed features or a price reduction as a result of being involved in the testing and/or development of the instrument. Also because one company decides to purchase the instrument, does not mean that another company will make the same decision. As explained above, there is not sufficient evidence in the declaration to determine or establish commercial success. It is also pointed out that the Tondre reference teaches some of the reasons such as rapid (fast) determination of concentration limits which would lead to the supposed unexpected advantage of identifying transition concentrations and temperatures (defining the limits or solubilization).

Examiner agrees with applicant that no single reference teaches or anticipates the instant claims. As such arguments that are directed to individual references are not commensurate in scope with the claims or the rejection that is applied against the claims. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Also, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). In this respect, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would

have suggested to those of ordinary skill in the art. See *In re Keller*, above and *In re Sneed* 218 USPQ 385 (Fed. Cir. 1983). Thus, one of skill in the art would be readily able to adapt automation of an instrument measuring dependent properties of an emulsion having different independent variables to the instrument and method of Tondre for the independent variables and dependent property in the Tondre instrument.

Relative to issues with the art rejection it is noted that Tondre is dealing with the automation of a tedious manual procedure for its attendant time saving (page 582). Examiner maintains that the table of page 13 of the January 30th response is in error with respect to the automation aspect of the claims. The table is also in error in that the measurements or Tondre are functions of temperature and concentration (figures 3-6, analogous or equivalent) and Tondre determines the temperature based on measurements (see the PT 100 probe shown in figure 2 and the first full paragraph of page 585). The description of the Tondre apparatus above has been modified to better show how the elements of claim 7 are found in the reference. The automation resulted in automated control to perform a set of experiments requiring temperature and composition changes. This also included an automated recording of the temperature and turbidity values with a double trace recorder (figure 3, for example and page 588). And the ultimate conclusion is that the automated procedure is well adapted to the determination of the phases in the microemulsions studied. Thus, the format of the data storage and the automated production of the phase diagrams are not taught by the Tondre reference. The Rouse reference is directed to the automation of phase diagram recording of microemulsions (title and abstract). In this reference, the data of the experiments is automatically recorded and stored in a computer (figures 2-3 and pages 38-40). The diagrams produced in the Rouse paper include three-dimensional diagrams and show the desirability of using a 3-dimensional representation of the data gathered. The tediousness of the process is the reason given for the desire to automate the process. It is noted that Tondre is an advancement over a simple titration because it is varying temperature in addition to concentration (last paragraph of page 582). Thus the Rouse paper, a titration experiment, is dealing with automation of the parts of the claim that the Tondre reference is not trying to automate. Thus there would have been a recognition or expectation that the advantages of Rouse would have been obtained by incorporating a computer system into the Tondre instrument that records and displays the data as taught by Rouse. Additionally the types

of samples (microemulsions) and the reasons for the automation (tedious process) are the same. This combined with the disclosures of the Dombay, Hagan, Nitta, Streett and Yan references, clearly teaching the computerized 3-dimensional, graphical presentation of data obtained from a series of experiments, does teach or suggest all of the limitations and provides both motivation and a reasonable expectation of success. The limitation are met because among other things the Dombay reference deals with experiments of emulsions similar to the samples being investigated by Tondre. The Hagan reference, while directed to a different type of analysis, is directed to improvement of an analysis process by the addition of computing power. In this respect the introduction describes a known computer-controlled instrument capable of running the experiments under computer control. Hagan teaches adding computer data storage, data recall and data representation in two- and three-dimensional form as the next step in improving the instrument due to the availability of increased computing power at the desktop or laboratory level. The Hagan reference also teaches that the three-dimensional plot is often helpful with multiple sets of data since the curves often contain similar shapes over certain areas of the curve. The three-dimensional curve allows the intuitive appreciation of the dependent processes. The Nitta, Streett or Yan references additionally show the desirability or utility of 3-dimensional graphics to show features of phase diagrams for binary or multivariate systems. While the disclosures of these reference may be similar or contain similar aspects, they show differences in utility or reasons for providing the automated data gathering processing and displaying. Therefore these references are not simply cumulative. Examiner notes that the advantages of a three dimensional representation of data from a series of experiments has been recognized for a long time as evidenced by the newly cited Dedek reference in which the data from the newly cited Panzer references was presented in a three dimensional format. Examiner also notes that the format of the three dimensional diagram is not specified in the claims. Additionally with this in mind, Tondre clearly produces or has available all of the information to construct a three dimensional diagram with temperature and composition as independent variables and turbidity as the measured dependent property.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so

long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In response to applicant's argument that Tondre and one or more of the secondary references are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The art clearly shows that dependent properties of similar samples can be analyzed for various independent variables that include one or both of temperature and composition. One common thread among all of the references is automation of the instrument and analysis process. This clearly includes control of changes in composition, recording the results of the experiments and displaying the results. An example of how the references are analogous can be seen from the Tondre and Rouse references with similar comments for the other secondary references. In this case, both Tondre and Rouse are in applicant's field of endeavor and are dealing with the automation of a prior analysis process and instrument. Additionally, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this respect a secondary reference might contain a pertinent teaching regarding the automation of an analysis process even though the analysis is of a different type because it is dealing with a problem common to automation of both types of analysis. This is the case with the combination of references currently applied and a consideration of the references in their entirety would show that each of the secondary references contain pertinent teachings regarding the automation of the Tondre instrument and process. Examiner notes that applicant asserts that the 3-dimensional diagrams of Rouse are produced by hand. If one looks at these figures, it is seen that these figures are reproduced from another reference. Since the reference referred to as the source of these figures is not of record in this application, applicant has no basis or support for the assertion that these diagrams were produced

by hand. It is also noted that this assertion of a manual activity appears to qualify as an identification of manual activity (if it truly is a manual activity) that would properly trigger the automation of a manual process as found in the *In re Venner*, 120 USPQ 192 (CCPA 1958) case. The *In re Keller* Court decision is particularly relevant to the argument of inoperability. The suggested modification is not the replacement of the Tondre analysis method with the Rouse analysis method, but an increase in the level of automation in the Tondre method and apparatus. If applicant thinks that examiner is trying replace the Tondre analysis method with the Rouse analysis method or vice versa, then the rejections have been incorrectly interpreted by applicant. Thus this argument is not persuasive because it is not commensurate in scope with or directed at the suggestion of the prior art as put forth by examiner.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references deal with the production of multidimensional phase diagrams and measurement of multiple dependent properties for solutions.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arlen Soderquist whose telephone number is (571) 272-1265. The examiner can normally be reached on Monday-Thursday and Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Arlen Soderquist

Arlen Soderquist
Primary Examiner
Art Unit 1743